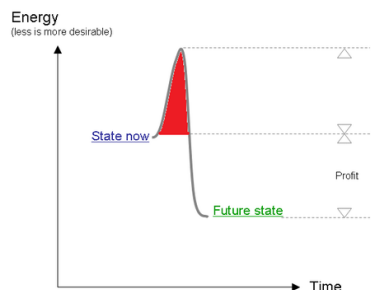
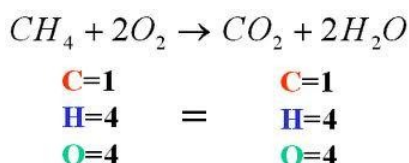


1. activation energy:



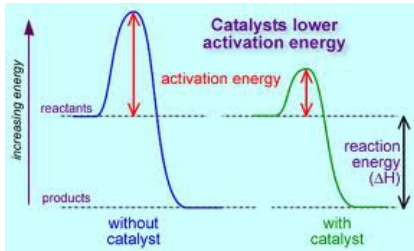
The minimum energy colliding particles must have in order to react

2. balanced equation:



a chemical equation in which mass is conserved; each side of the equation has the same number of atoms of each element

3. catalyst:



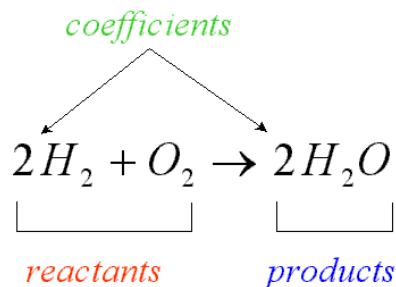
a substance that speeds up the rate of a chemical reaction by lowering a reaction's activation energy

4. **chemical reaction:** the process by which one or more substances change to produce one or more different substances

5. **clues of an endothermic reaction:** makes surroundings colder, growing, melting, boiling, evaporating, cooking

6. **clues of an exothermic reaction:** makes surroundings warmer, burning, exploding, freezing, condensing (gas to liquid), sound or light

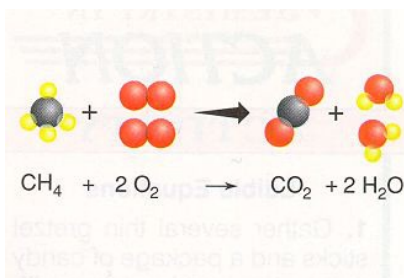
7. coefficient:



A number in front of a chemical formula in an equation that indicates how many molecules or atoms of each reactant and product are involved in a reaction

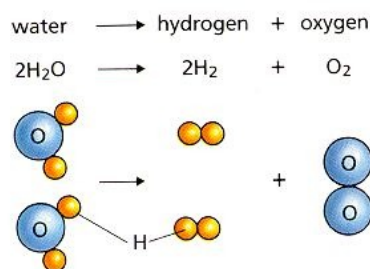
8. **collision theory:** For a reaction to occur, the particles must collide, and they must collide with sufficient energy.

9. combustion reaction:



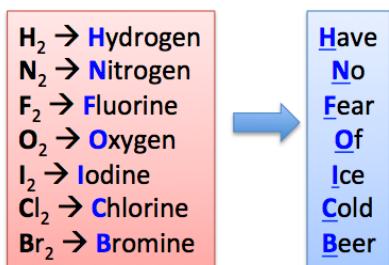
a chemical reaction that occurs when a substance reacts with oxygen, releasing energy (in the form of heat and light), carbon dioxide, and water

10. decomposition reaction:



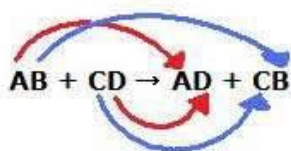
a reaction in which a single compound breaks down to form two or more simpler substances

11. **diatomic element:**



Elements that in their pure form exist in pairs (I Have No Bright Or Clever Friends)

12. **double replacement reaction:**



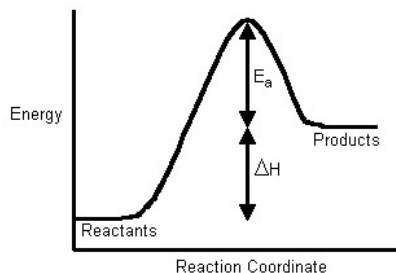
a chemical change that involves an exchange of positive ions between two compounds

13. **endothermic reaction:**



a chemical reaction that absorbs energy from its surroundings

14. **endothermic reaction graph:**

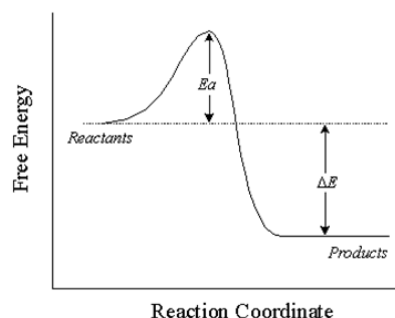


15. **exothermic reaction:**



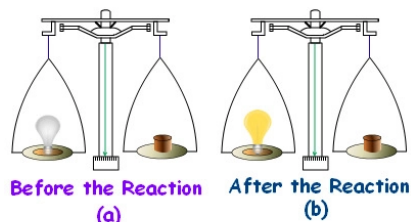
a chemical reaction in which heat is released to the surroundings

16. **exothermic reaction graph:**



17. **five factors that increase reaction rate:** surface area of reactants, temperature, reactant concentration, pressure, and use of a catalyst
18. **how increased pressure increases reaction rate:** Increased pressure = smaller space = particles closer together = increase frequency of collisions = particles more likely to react
19. **how increased reactant concentration increases reaction rate:** Higher concentration = more particles in same amount of space = particles more likely to collide and therefore more likely to react
20. **how increased reactant surface area increases reaction rate:** Increased surface area = increased area for reactant particles to collide with more collisions and greater chance of reaction
21. **how increased temperature increases reaction rate:** Higher temperature = particles have more energy = move faster and are more likely to collide with other particles = number of successful collisions increases

22. **law of conservation of matter:**



Law of Conservation of Mass Example

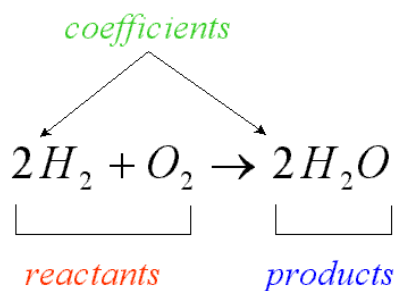
matter cannot be created or destroyed; it can only change form (the mass of the reactants must equal the mass of the products in a chemical reaction)

23. **precipitate:**



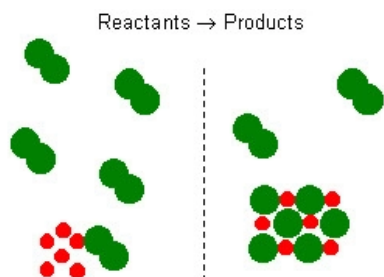
A solid that forms from a solution during a chemical reaction (sign of a chemical reaction)

24. **product:**



A substance produced in a chemical reaction

25. **reactant:**



A chemical substance that is present at the start of a chemical reaction

26. **reaction rate:** the rate at which reactants change into products over time (how rapidly a reaction takes place)

27. **signs of a chemical reaction:**



new substance produced, unpredictable color change, unpredictable temperature change, odor, gas produced, irreversible, precipitate formed

28. **single replacement reaction:**

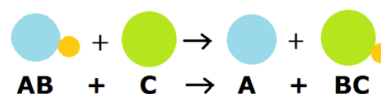
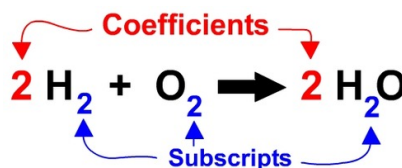


Figure 2.5

A chemical reaction that occurs when the atoms of one element replace the atoms of another element in a compound

29. **subscript:**



A number in a chemical formula that represents the number of atoms in a molecule or the ratio of elements in a compound

30. **synthesis reaction:**

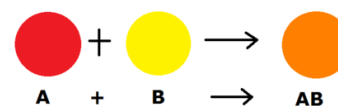


Figure 2.3

a reaction in which two or more substances combine to form a new compound

31. **why balance equations?:** so that we do not violate the law of conservation of matter- since matter can't be created or destroyed, we need to make sure that there are the same number of each element on both sides of the equation